Proceedings of the Iowa Academy of Science

Volume 1 | Part 2, 1890-1891; (1887) - Article 45

1890

Egg-Laying of the Apple Curculio (Anthonomus quadrigibus Say)

C. P. Gillette

This insect is decidedly an injurious species. Trees upon the college campus that were worst attacked by this fly the past summer, have had not more than one-half their normal amount of foliage.

On the 18th of April, last, the writer noticed the flies abundant among the branches of the trees, and the process of egg-laying was carefully watched with a hand lens. The females were so intent upon their duties for the propagation of the species that they were not easily disturbed. They do not pierce the bud scales, but work their long, slender ovipositors far down between the scales, and there deposit a large nest of eggs, sometimes forty or more in a place. By separating the scales these clusters of eggs can be plainly seen with the naked eye. The irritation set up by these eggs and the maggots that hatch from them, aided, perhaps, by a poisonous secretion from the mother insect, causes the abnormal development of the part. The galls and the twigs supporting them all die a few weeks later, when the maggots drop to the ground. These dead galls turn black, and remain upon the trees, giving them an unsightly appearance.

EGG-LAYING OF THE APPLE CURCULIO—(ANTHONOMUS QUADRIGIBBUS SAY).

BY C. P. GILLETTE.

I am not aware that anyone has published actual observations on the method of oviposition by this insect. On the 13th of June, 1889, I was fortunate enough to see a female perform the entire operation which was as follows: First a cavity was eaten in the apple as deep as the beak was long, the bottom being much enlarged and sub-triangular in outline. The walls of the cavity converged to the opening which was only large enough to admit the slender beak. When first noticed the beetle had but just begun her work and it was thirty minutes before she had the egg cavity completed. The beetle, almost immediately after withdrawing her beak turned about and applied the tip of her abdomen to the small opening. After remaining in this position for about five minutes she walked away without turning about to inspect the work she had so neatly done. I at once plucked the apple and examined closely the identical spot where the beetle had been at work and was surprised to find that there was no puncture to be seen, but a minute brown speck instead which would not arouse a suspicion of what had been done. The beetle had smoothly plugged the little opening with what appeared to be a bit of pomace, probably excrement, and she had done the job so nicely that no one would suspect that the little speck marked the place of oviposition unless he had seen such marks before and had learned what they signify. With a sharp knife a section was made through the egg-chamber, with the egg at the bottom.

Although at first it is almost impossible to distinguish stung fruit from external appearances, it becomes very easy after a few days when the apples become gnarly and ill-shapen.

THE GALL-PRODUCING CYNIPIDÆ OF IOWA.

BY C. P. GILLETTE.

The Cynipidæ form one of the most interesting, but one of the least studied families of the Hymenoptera. It is the object of this paper to encourage the collection and study of the gall-producing Cynipidæ of the State. The species here mentioned have, with one exception (Rhodites multispinosa), been taken by the writer in the past two years in the vicinity of Ames, Iowa. There can be no doubt but what two or three times as many species occur in the State.

The writer will be glad to receive for study or determination any species that may be sent to him.

I give with each species mentioned a reference to the original description, a brief description of the gall and the localities from which the species has been taken, so far as known to me.

LIST OF SPECIES.

Rhodites multispinosi Gill. Bull. 7, Ia. Exp. St., p. 284. Entomologica Americana, v. VI., p. 25.

The galls are abrupt tumor-like excresences from three-fourths of an inch to over an inch in diameter and densely covered with sharp spines, growing on new shoots of a species of wild rose. Flies issue early in May. Iowa, Minnesota.

Amphibolips coccinea O. S., Proc. Ent. Soc. Pha., v. 1, p. 243.

This species produces one of the largest "oak apple" galls that we have. Large galls measure one and three-fourths inches in their greatest diameter, and about a fourth of an inch less in their smallest diameter. Externally there is a thin, smooth, brittle shell; at the center there is an egg-shaped central cell, surrounded by a loose spongy mass, which is easily separated from it; occurring on the leaves of *Q. coccinea*. Flies emerge about the 20th of June. Michigan, Iowa, D. C.

Amphibolips cookii Gill. Rep. Mich. B'rd of Agr., 1887, p. 475. Psyche, Vol. V, p. 220.

The galls are globular and juicy when green, much resembling the galls of *A. inanis* O. S., and measure from three-eighths to five-eighths of an inch in diamete. The galls are composed of a rather thin outer shell, and central cell held in place by stout radiating fibers. The galls are always found